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ABSTRACT

The question of whether the market for administrators is segmented by institutional types (i.e., region, affiliation, size, mission, and resource level) was investigated. One facet of the research was the applicability of segmentation theory to the occupational labor market for college managers. Principal data were provided by career histories of a national sample of 2,896 administrators obtained as part of Pennsylvania State University's Leaders in Transition project. A second database provided information for 3,441 higher education institutions. Variables of concern included: four geographic regions; affiliation as either public, private, Protestant, or Catholic; size of enrollment; mission as defined by the 1976 Carnegie Commission on Higher Education codes; and resource level as determined by the ratio of total revenue divided by enrollment. A set of job transition matrices charted career moves of the sample of administrators separately by the five variables. Separate analyses were undertaken for administrators who changed institutions and those who changed jobs but not institutions. Findings for managers who changed institutions include: a strong preference for intra-regional moves; and a significant tendency toward intra-affiliation category transitions, with distinct barriers to movement between some subgroups. (SW)

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Job-Transitions in the Administrative Labor Market in Higher Education: Some Methodological Considerations

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INTRODUCTION

The structure of the labor market for administrators in higher education has until quite recently all but escaped the serious notice of social science researchers. This is not surprising in light of the fact that conventional wisdom in academe has traditionally assumed that no such structured market exists. In this view, careers in academic administration are "accidents" which happen to erstwhile professors who become "amateur" administrators. This image may have had a degree of realism during the infancy of higher education when the typical college had only two or three administrative staff members: a president (who also taught courses), a clerk/registrar, and perhaps an official responsible for insuring respectable deportment by the undergraduates. It is demonstrably no longer true of a higher education enterprise composed of more than 3,000 separate institutions served by approximately 900,000 full-time administrators, large numbers of whom have made a long-term commitment to their careers. This commitment is amply demonstrated by the fact that a substantial portion of this group have not come through the faculty ranks even though they have earned advanced degrees designed to facilitate their entrance into and promotion through the administrative ranks (Scott, 1978).

The research reported here began as an effort to discover whether differential institutional type constitutes a structural variable in the labor market for collegiate administrators that is analogous to the role which industry type appears to play in the heterogeneous national labor market. The general theoretical approach adopted for the project, then, is that provided by the recent, growing body of literature which Baron and Bielby (1980) have labeled "the new structuralism."

While sociological demographers have contributed substantially to our understanding of certain patterns and trends in labor market activity, the attempt to explain employment patterns as a market phenomenon (i.e., as a supply-demand nexus) has long been the almost exclusive domain of economists. Within the last decade, however, that particular division of labor has begun to change. Spurred principally by what many critics have come to view as the sterility of status attainment research with its implicit individualism and its relative neglect of structural variables, sociologists such as Stolzenberg (1975), Bibb and Form (1977), Beck, Horan, and Tolbert (1978), and, more recently, Berg and his associates (1981) have turned to the analysis of labor markets in the attempt to introduce appropriate structural variables into our

understanding of socio-economic reward processes. They have joined with "institutional" economists like Kerr (1950), Dunlop (1957), and Galbraith (1973), as well as with more radical economists (also called "dualists" and/or "segmentationists") like Bluestone (1970), Doeringer and Piore (1971), and Reich, Gordon, and Edwards (1973), in questioning both the adequacy of status attainment models as an explanation of inequality and the efficacy of standard microeconomic theories of the functioning of labor markets. The resulting theoretical literature has almost uniformly made two key points about market segments: (a) conditions of reward vary in the different segments; and (b) the better rewarded segments are relatively closed to those in lower segments.

Perhaps because this stream of literature began as a critique of neoclassical microeconomics and status attainment literature in sociology, the tendency has been to confound the entrenched approaches with their own favored methodology. That is, empirical studies usually involve the regression of sets of independent variables on wages to show that the inclusion of "structural" factors in the models improves their explanatory power (i.e., increases R Square). Unfortunately, such research ignores the conceptually prior issue. To wit: If segments were not relatively closed, they could not be said to comprise segments, (the very term implies bounded entities), and differential patterns of reward among them would scarcely matter. (If one defined one's current rewards as inadequate, in an open system one would simply seek out a better rewarded position.) Thus, if the initial issue is the existence of segments, then it is movement between and among categories that should be analyzed first rather than the covariance of other factors with wages.

If one wishes to adopt a mobility method, one must first devise a strategy for locating likely segments. Little guidance is provided in the extant literature for such a search within an industry-specific labor market such as that for administrators in higher education. However, institution type seems the most likely analogue to the industry type distinctions used in the few mobility studies thus far attempted by segmentationists (e.g., Jacobs, 1983; Stinchcombe, 1979; Tolbert, 1982).

In the effort to understand this specialized academic labor market, the current study utilizes data on the career patterns of a representative sample of high-level line administrators serving in the nation's four-year colleges and universities. Since, after a quarter century of unprecedented growth, higher education in this country has now begun a period of retrenchment, this population, charged as it is with the primary responsibility of managing the resources of the academic enterprise, is likely to become increasingly important in the years ahead. Reflecting perhaps the conventional view of administration in higher education as a non-occupation, there have been, until recently, few empirical studies of this group. Even among most recent efforts, research has tended to focus upon selected and/or fragmented subsamples; e.g., presidents and deans have come in for a good deal of notice, but not much is known about directors of development. (There have been numerous studies of faculty mobility, but it is assumed here that faculty and administrators represent two partially distinct components of the professional level employees of higher education.) Thus, a more broadly-based understanding of the mobility patterns of this influential population has some importance on its own account.

In brief, this research attempts to achieve three distinct objectives:

(1) It enhances our substantive understanding of an important occupational category.

(2) It adapts and applies some of the insights of segmentation theory, generated to explain the nature of the national labor market, to a specialized market.

(3) It applies standard mobility study methodology to a new area, and, thus creates the opportunity for some extensions of that method.

In order to accomplish these objectives, the study focuses upon the following primary research question: Is there significant, direct job movement among administrators within, but not across, institutional boundaries based upon the following distinctions: (a) region of location; (b) type of nominal affiliation; (c) size; (d) institutional mission; and (e) resource level?[1]

Finally, it is important to acknowledge at the outset that while we utilized data from individual administrative careers in our attempt to answer all these questions, careers are <u>not</u> the primary unit of analysis. Individual job transitions are, for they appear to be the appropriate basic unit at the level of the market.

METHODOLOGY

Principal data for this study were provided by the career histories of a national sample of 2,896 collegiate administrators obtained as part of the <u>Leaders in Transition</u> project conducted in 1981 under the auspices of The Center for the Study of Higher Education at The Pennsylvania State University. In order to assess the role of institutional type in the job-transition behavior of these administrators, a second data base utilizing information from several published sources and detailing the relevant variables for 3,441 higher education institutions was constructed by the investigator. The variables selected as important for measuring the impact of institutional type were <u>region</u> of location (North, South, Midwest, and West, with the 50 states assigned to regions as described by Blau, 1973); nominal <u>affiliation</u> (public, private/independent, Protestant, and Catholic); <u>size</u> (enrollment); <u>mission</u> (defined by the 1976 Carnegie Commission on Higher Education codes); and <u>resource level</u> (the ratio of total revenue divided by enrollment).

These institutional data were merged with the information detailing the sequences of institutional affiliations throughout the careers of all sample members. A set of job transition matrices charting their career moves separately by region, affiliation, size, mission, and resource level was constructed from the resulting merged data base. [Since size and resource level are continuous variables and transition matrices require the use of categorical data, the <u>cumulative $\sqrt{f(x)}$ rule</u> tested and recommended by Bryson and Phillips in <u>Sociological Methodology</u> (1975) was used to subdivide these two distributions into discrete categories.]

The process of matrix construction can best be explained by example: In order to analyze patterns of movement by region, a contingency table was derived from the data which detailed for a given job transition (e.g., movement from job 7 to job 6),[2] the cross-tabulation of region of <u>origin</u> (job 7) with

region of destination (job 6). Since sample members had occupied as many as ten coded positions, nine separate such tables had to be cross-tabulated (one for movement from job 10 to job 9, another for job 9 to job 8, etc., through job 2 to job 1), and the results combined into a single transition matrix. This entire process was repeated for each of the five institutional type variables. All the resulting cell tables were then subjected to analysis both by standard log-linear techniques as well as by some extensions of the approach devised by the researcher. That is, the typical use of the log-linear approach in mobility research involves the testing of competing models of association and the partitioning of a measure of association known as the Likelihood Ratio (L Square), and such techniques were utilized here. However, a potentially useful and relatively simple approach to the internal analysis of two-way tables which is often overlooked by researchers was used for some of the detailed analysis undertaken in this study. Briefly, what Goodman (1969) calls "effect parameters" (lambdas) were calculated for each cell of the main contingency tables; these parameters were then standardized by dividing them by their standard errors. The resulting ratios are essentially Z scores and may be analyzed for statistical significance in the usual fashion. Thus, this approach allows one to determine in a transition matrix not only whether origin and destination are generally related, but also specifically among the various categories which are positively or negatively and strongly or weakly associated with which. Since a major objective of this study was the discovery of barriers to movement (i.e., segmentation), it involved in the statistical case a search for negatively-signed, significant standardized effect parameters.

These same log-linear models were also analyzed along more traditional lines for what they indicated about the model of association which each represented. Indeed, in light of the considerable emphasis on the importance of differentiating movers from stayers in the mobility literature, it seemed to this researcher that more than the usual versions of each transition matrix needed to be examined. Experts on mobility now argue that, especially over brief periods of time, most people are stayers rather than movers and that ignoring this fact seriously inflates the apparent presence of barriers to mobility. The most frequently used remedy to this problem is to analyze both the independence model for the total transition matrix and the quasi-independence model. (The latter involves blanking out all the diagonal cells in the matrix, effectively removing those whose origins and destinations are the same, before performing the log-linear analysis.) Unfortunately, this approach, while it deals with the barrier inflation problem, may also introduce a barrier deflation bias.

To solve both these problems, the current project undertook the analysis of a third form of each model. For all the main matrices, those who changed jobs but not institutions were removed, and the tables containing only institutional movers were reanalyzed. Conceptually, this distinction between institutional stayers and categorical stayers who are also institutional movers seems important. Those who move from one institution to another even if they remain in the same institutional category, seem not to be stayers in the same classic sense as those who remain at one institution. Our primary interest is in barriers to movement among categories, and there is little doubt that the presence in the models of large numbers of intra-institutional job changes, effected by people whose lack of mobility may be self-imposed, seriously inflates the appearance of external impediments to movement. On the

other hand, simply ignoring all cases in which individuals remain in the same category indulges the pretense that only obstacles for those who change categories are relevant. Therefore, our movers only models, which retained all cases of inter-institutional moves, became the object of especially intensive scrutiny as the analysis unfolded.

The analysis of each of the three sets of matrices (all cases, movers only, and quasi-independence) for each of the five major independent variables (region, affiliation, size, mission, and resource level) began by comparing the models for the degree of association between origins and destinations which they portray. The effect upon L Square of removing, first, institutional stayers and, then, all stayers from the model was examined in traditional fashion by reporting the reduction in L Square for each succeeding version of the model. This technique yields a statistic conventionally labeled R Square, and comparing R Squares for related models allows for a partitioning of the effects of various components of the matrix. [E.g., the removal of the diagonal in the quasi-independence model and the finding that this leads to an 80 percent reduction in L Square (R Square = .80) is usually interpreted to mean that the diagonal accounts for eighty percent of the explanatory power of the model.][3] However, since L Square is proportionate to sample size and this process of removing cases reduces N at each step, one would expect a reduction in L Square equivalent to the percentage decrease in the sample size even if the pattern of distribution of cases in the matrix remained exactly the same. Thus, in addition to reporting L Squares and R Squares in conventional form, two new statistics, Expected L Square and Effective R Square, were also calculated for all the model sets. The latter statistic more realistically reflects the actual extent of changes in the distribution of cases in the cell table when institutional stayers or all stayers are removed from the table. It is, then, a more accurate measure of their impact on the model.

Analyses comparing the relative strength of association between origin and destination in the various separate matrices for all five institutional type factors were also undertaken. The traditional method used for this purpose is the comparison of the Index of Dissimilarity for each of the matrices. This index (also called Delta or D) is the proportion of cases in a matrix which would have to be rearranged in order for the hypothesized model to fit. Phrased differently, delta is the percentage of cases not explained by the model; thus, the larger the delta, the poorer the model fit (and, in this case, the more strongly origins and destinations appear to be related). Since the index is a proportion, it makes possible comparisons of the relative fit of different models even when they involve different subsamples. Chi Square, L Square, and related statistics are all sensitive to variations in sample size and, thus, make direct comparisons of matrices focused upon different sub-groups difficult. [Because of missing data, especially for mission and resource level, the total number of transitions analyzed in the five main matrices were not equal. (That is, N ranged from 7,512 for resource level to 8,250 for region.) Moreover, the matrices contained different numbers of cells; e.g., there were 16 cells (4 x 4) in the tables for region and 64 cells (8 x 8) in the mission tables.] The use of delta overcomes the difficulties inherent in this situation.

Since the use of delta allows for comparisons of different models that are unaffected by sample size and matrix configuration variations, another new technique was devised for comparing the five main sets of matrices. The pro-

cedure rests upon calculating the decline in delta in both absolute (analogous to decrease in L Square) and percentage (analogous to reduction in R Square) forms as subgroups are removed from the model. This approach allows for comparisons that are a logical analogue to partitioning models by the use of R Square, but accomplishes the process with a standardized index.

Finally, a brief acknowledgement of some of the limitations and deficiencies of this methodology is certainly in order. The ideal assessment of the relative importance of the five institutional type factors would involve analyzing all five simultaneously in the same log-linear hierarchical model and partitioning the likelihood ratio so that the specific effect of individual variables, as well as of potential interactions among them, could be assessed. However, a multiway table of such complexity would contain too many small or empty cells for meaningful analysis. Thus, since experts like Duncan (1979) and Goodman (1981) warn against solely convenience-determined collapsing of cells in such tables, such analyses have not even been attempted here. This means, however, that we may well be overlooking some confounding of effects among these variables.

Two additional cautions on the use of this transition matrix methodology should also be entered. First, this approach treats all transitions as temporally equivalent, i.e., without regard for when they took place, either absolutely or at what point in the person's career and/or life cycle. (In other words, potential age and cohort effects are ignored.) Length of time in specific positions is also being neglected though it is quite variable. Thus, important time variables are essentially uncontrolled. Second, use of this approach, involving simply movement from Job 10 to Job 9, Job 9 to Job 8, etc., and ignoring the total sequence of individual careers, carries with it implicit assumptions that are analogous to those of Markov-Chain models. Such models assume that what happens at Time 2 is stochastically related to events at Time 1 without being affected by other events preceding Time 1. Most recent empirical literature on careers suggests that such a model is an inadequate representation of the reality of careers. (For example, see Rosenbaum, 1979a and Stewman and Konda, 1983, though March and March's 1977 study of the "almost random careers" of Wisconsin school superintendents is a notable exception to this trend.) They must be seen instead as sequences of events in which all or most prior events influence all subsequent ones.

Thus, this focus on individual job transitions in the market for administrators, especially since time variables are not controlled, must be seen as a first-stage exploratory step. However, it seems a useful first step since market segmentation should affect not only individual careers but also should be reflected in patterns of movement at this level of the market.

THE RESULTS

Detailing all the results for a series of analytical steps as complex as those described above is, of course, impossible in the current paper. Therefore, it was decided to share detailed results only for each of the two new analytical procedures created for the study and merely to exemplify and summarize the remaining substantive findings.

Tables 1 and 2 report the major findings of the analysis of likelihood ratios of the three types of models for all five independent variables. The case of region well illustrates the utility of analyzing what we have called Effective R Square. For that variable, when the all cases and movers only models are compared, L Square is reduced from 13,443.36 to 1,483.33, and the apparent R Square equals 0.897. The sample size reduction from 8,250 to 2,761 (a decrease of 66.5 percent) would, however, lead us to expect a commensurate reduction in L Square for the movers only model (i.e., Expected L Square = 4,503.33) even if the removal of all those cases had no impact at all upon the distribution of cases in the table (that is, if each cell frequency had decreased by 66.5 percent). Therefore, we estimated the Effective R Square (reflecting the extent of real changes in the pattern of distribution of cases in the cell table when intra-institutional moves are deleted) to be 0.671. Examining the Apparent and Effective R Squares for all the possible model comparisons shows the importance of this modification. Apparent R Square for the All versus Q.I. comparisons equals 0.999, and the difference between it and apparent R Square for All versus Movers only is 0.102. This suggests that only about 10 percent of the change in the models is accounted for by intra-category movers. However, when the two Effective R Squares are compared (0.996 - 0.671), then it appears that these intra-category movers are responsible for over 30 percent of the change in the models.

The other new technique created for this study can best be demonstrated by analysis of Tables 3 and 4. Table 3 reports the actual deltas, as well as their rank orders of magnitude for the five variables separately for the three types of models. These rank orders of delta change dramatically when the all cases models are compared with the movers only models, and they evidence still a different pattern for quasi-independence models. Most striking is the fact that region and affiliation have the two largest deltas for the movers only models and the two smallest ones for the quasi-independence models. (Indeed, in the latter case, the two deltas fall below the five percent level conventionally used to indicate models of acceptable fit.) This suggests that even for those who change institutions there is a strong tendency to remain within regional and affiliation categories.

This picture is further clarified by the data summarized in Table 4. As the figures show, three of the five variables—size, mission, and resource level—are heavily affected by the removal of intra-institutional job changes (i.e., show large declines in delta for the All versus Movers comparison both absolutely and relatively). Affiliation and region also show declines, but they are much smaller. Not surprisingly, since they sustain major declines in the first comparison, size, mission, and resource level evidence much smaller declines in delta when the Movers versus Q.I. comparison is examined. In this comparison set, region shows the greatest decline, by far, although that for affiliation is also relatively substantial. Finally, region shows the greatest total decline in delta, both relatively and absolutely. However, while the absolute total decline for affiliation is the smallest of the five variables, its percentage decline is second only to that of region.

The substantive meaning of these patterns is relatively straight-forward. When intra-institutional moves are deleted, a considerable portion of the apparent association between origin and destination for size, mission, and resource categories disappears. (That is, the independence model comes closer to acceptable fit.) This suggests that if an administrator is able and will-

Table 1. Reported Likelihood Ratios, Degrees of Freedom, Probability Levels, Sample Sizes, and Expected likelihood Ratios for All Models-- Five Independent Variables

Models	Reported L Square	df	p	N	Expected L Square
			Region		
All	13,443.36	9	.000	8,250	---
Movers	1,483.33	9	.000	2,761	4,503.53
Q.I.	7.09	5	.214	1,092	1,774.52
			Affiliation		
All	10,349.30	9	.000	8,236	---
Movers	584.29	9	.000	2,750	3,456.67
Q.I.	30.92	5	.000	1,181	1,479.95
			Size		
All	12,862.36	25	.000	8,138	---
Movers	332.44	25	.000	2,672	4,218.78
Q.I.	159.41	19	.000	1,964	3,099.77
			Mission		
All	15,293.52	49	.000	7,740	---
Movers	377.11	49	.000	2,391	4,725.53
Q.I.	192.36	41	.000	1,823	3,609.27
			Resource Level		
All	11,390.05	25	.000	7,512	---
Movers	203.03	25	.000	2,303	3,496.75
Q.I.	127.63	19	.000	1,634	2,483.03

Note. All = All cases; Movers = Intra-institutional moves deleted; Q.I. = Quasi-independent (i.e., the diagonal blanked out.)

Table 2. Apparent R Squares, Percentage Reductions in Sample Size, and Effective R Squares for Relevant Model Comparisons--Five Independent Variables

Model Comparison	Apparent R Square	Reduction in N	Effective R Square
		Region	
All v. Movers	.897	.665	.671
All v. Q.I.	.999	.868	.996
		Affiliation	
All v. Movers	.944	.666	.831
All v. Q.I.	.997	.857	.979
		Size	
All v. Movers	.974	.672	.921
All v. Q.I.	.988	.759	.949
		Mission	
All v. Movers	.975	.691	.920
All v. Q.I.	.987	.764	.947
		Resource Level	
All v. Movers	.982	.693	.942
All v. Q.I.	.989	.782	.949

Note. All = All cases; Movers = Intra-institutional moves deleted: Q.I. = Quasi-independent (i.e., the diagonal blanked out).

Table 3. Indexes of Dissimilarity (and Relative Rank) for All Independence Models--Five Independent Variables

	Independence Models		
Variable	All (Rank)	Movers (Rank)	Q.I. (Rank)
Region	.5974 (2)	.3343 (1)	.0342 (5)
Affiliation	.4847 (5)	.1889 (2)	.0448 (4)
Size	.5680 (3)	.1368 (4)	.1089 (2)
Mission	.6016 (1)	.1520 (3)	.1309 (1)
Resource Level	.5493 (4)	.1104 (5)	.1058 (3)

Note. All = All cases; Movers = Intra-institutional moves deleted; Q.I. = Quasi-independent (i.e., the diagonal blanked out).

Table 4. Absolute and Percentage Decline in Delta for All Independence Model Comparisons of the Five Major Independent Variables

	Decline in Delta		
	All v. Movers	Movers v. Q.I.	All v. Q.I.
Variable	Absolute (Percent)	Absolute (Percent)	Absolute (Percent)
Region	.2631 (44.0)	.3001 (50.2)	.5632 (94.3)
Affiliation	.2958 (61.0)	.1441 (29.7)	.4399 (90.8)
Size	.4312 (75.9)	.0279 (04.9)	.4591 (80.8)
Mission	.4496 (74.7)	.0211 (03.5)	.4707 (78.2)
Resource Level	.4389 (79.9)	.0046 (00.8)	.4435 (80.7)

Note. All = All cases; Movers = Intra-institutional moves deleted; Q.I. = Quasi-independence (i.e., the diagonal blanked out).

ing to move from the institution of current employment, the barriers to category change are less serious for these three variables than for affiliation and region. When all stayers (both institutional and categorical) are removed from the various models, the picture changes. In that instance (the quasi-independence models), what emerges is a vision of a market more highly structured, first, by mission categories, and, then, somewhat less so by size and resource levels. Region and affiliation, exhibiting the much smaller deltas, apparently have the least discernible structured relationship between origins and destinations. It would appear, then, that for size, mission, and resource level the major impediment to inter-category mobility is institutional staying, while for region and affiliation a combination of institutional and categorical staying provides most of the structure in the market. In sum, this analysis of the meaning of the deltas supports the same general picture of relationships which the examination of likelihood ratios had suggested but enhances our confidence in its validity because of the standardization implicit in delta.

The examination of the pattern of standardized effect parameters (lambdas) amplifies our understanding of the nature of the specific relationships between and among categories. Since only saturated models produce meaningful standardized lambdas on a cell-by-cell basis in two-way tables, such statistics are not available for quasi-independence models. (The latter are not saturated, by definition.) However, this still leaves ten sets of parameters of potential interest, i.e., one for the all cases model and another for the movers only model for each of the five independent variables. In the interest of parsimony, detailed results for only two of those variables are reproduced here. (This should illustrate the process of analysis sufficiently.) A general, verbal summary of the patterns of relationships suggested by the tabular data for all five variables will augment the analysis. (The full set of tables is available from the author.)

As can be seen in the top half of Table 5, the standardized lambdas on the diagonal of the all cases model for <u>affiliation</u> are all positive and significant, and all those in the off-diagonal cells are negative and significant. The analysis of results for the movers only model (bottom half of Table 5) begins to show quite a different picture, however. Specifically, the diagonal figures in it are considerably smaller than those in the all cases model (especially for the private category), and, while the Z scores remain negative in all but one of the off-diagonal cells, several become negligible in size.

Thus, it becomes meaningful in this instance to highlight the cells for which these interaction terms are both negative and significant and which, therefore, can be said to indicate the existence of barriers to movement. Specifically, moves which originate in the public institutions are unlikely to end in the independent nonprofit (private) or Catholic institutions. Those working in private institutions are unlikely to move directly to the public sector. Administrators in Protestant colleges are unlikely to move directly to Catholic schools, and those already in Catholic schools do not typically go directly to either Protestant or public institutions. The only positive parameter is for moves from the public sector to Protestant institutions, but it is not large enough to be said to constitute a link between the two. Finally, the interaction terms for private to Protestant and private to Catholic moves, as well as for the reverse patterns, while still negative are rather small in the movers only model. It is difficult to know whether this represents a rel-

Table 5. Standardized Effect Parameters for Job Transitions by Affiliation--All Cases and Movers Only

All Cases

	Destination			
Origin	Public	Private	Protestant	Catholic
Public	28.271*	-7.230*	-3.120*	-8.263*
Private	-8.501*	24.777*	-4.312*	-5.088*
Protestant	-3.757*	-5.520*	22.554*	-8.247*
Catholic	-6.058*	-3.975*	-6.961*	25.379*

Movers Only

	Destination			
Origin	Public	Private	Protestant	Catholic
Public	10.121*	-3.090*	0.225	-4.068*
Private	-4.272*	5.791*	-0.568	-0.433
Protestant	-0.045	-1.531	10.394*	-5.439*
Catholic	-2.593*	-0.203	-4.768*	11.574*

* $p < 0.05$

ative lack of barriers, or, in fact, reflects primarily the rather confused pattern of affiliation labeling which besets higher education. That is, it is possible that the individual transitions which make it appear relatively possible for an administrator to move from, for example, a Catholic to a private school are in large numbers actually moves to schools which are nominally private but which have Catholic origins, traditions, and ties.

Unlike affiliation, resource level categories represent a constructed, ordinal scale with artificial boundaries methodologically imposed. In the all cases model (see top half of Table 6), the patterns include large positive diagonal cells, no off-diagonal cells with significant positive terms, and a tendency for significant negative terms vis-a-vis those subgroups furthest away from a given category.

When institutional stayers are deleted (see bottom half of Table 6), most of the apparent barriers (i.e., significant, negative terms) decline or disappear, and the magnitude of the parameters on the diagonal decreases dramatically. Moreover, some of the parameters that were indeterminant in the original model become positive and significant (i.e., category second to large, fourth to fifth, fifth to fourth and to small, and small to fifth). Without exception, these links are with adjacent categories.

In sum, the standardized effect parameters fill in some of the detail on the nature of the structure which exists in the market for administators. When we examine all cases, the enormous numbers of institutional stayers tend to overpower the models, making it appear that there are significant barriers to mobility among all types of categories. When we focus only upon those who change institutions, there appears to be:

(1) a continued strong preference for intra-regional moves, with little discernable pattern for inter-regional ones;

(2) a somewhat smaller but still significant tendency toward intra-affiliation category transitions, with distinct barriers to movement between some subgroups;

(3) a common pattern for the two variables which are clearly ordered sets of categories (size and resources), including a diminished preference for category staying and a trend toward links between adjacent categories and barriers between distant ones; and

(4) a roughly comparable picture for the variable which has some ordinal properties (mission), with the one category whose position in ordering is difficult to determine (elite Liberal Arts Colleges) not quite fitting the picture.

CONCLUSION

This research has attempted to answer a multifaceted research question and, in so doing, to test in exploratory fashion the applicability of segmentation theory to the occupational labor market for administrators in higher education. Concretely, we have asked, is the market for administrators segmented by institutional types (i.e., region, affiliation, size, mission, and

Table 6. Standardized Effect Parameters for Job Transitions by Resource Level—All Cases and Movers Only

All Cases

	Destination					
Origin	Large	Second	Third	Fourth	Fifth	Small
Large	13.568*	-0.577	-0.785	-4.928*	-6.079*	-3.598*
Second	1.737	22.049*	-2.183*	-6.287*	-6.324*	-5.335*
Third	0.481	-2.101*	22.247*	-2.270*	-5.146*	-6.525*
Fourth	-1.838	-5.734*	-1.878	24.021*	-0.810	-2.447*
Fifth	-3.299*	-2.409*	-4.215*	-0.188	23.481*	-1.122
Small	-2.020*	-2.097*	-2.844*	-0.922	0.857	15.720*

Movers Only

	Destination					
Origin	Large	Second	Third	Fourth	Fifth	Small
Large	4.467*	1.350	1.295	-2.968*	-4.233*	-1.645
Second	3.152*	2.458*	0.805	-3.320*	-3.255*	-2.483*
Third	1.684	0.566	1.598	0.723	-2.090*	-3.367*
Fourth	-0.752	-3.472*	0.812	3.365*	2.273*	1.101
Fifth	-2.405*	0.030	-1.788	2.566*	4.790*	2.289*
Small	-1.492	-0.476	-1.123	1.038	2.955*	3.635*

* $p < 0.05$

resource level)? The answer, while generally affirmative, has complex implications.

The fact that the independence models for both the all cases and the movers only versions of all five variables are statistically significant means that there is some form of structure in these movement patterns. More specifically, origin and destination are related for all five factors. It must be acknowledged, however, that much of that structure for size, mission, and resource level is provided by people who change jobs within the same institutions, while regional and affiliation category distinctions remain pronounced even when intra-institutional moves are deleted from their matrices. Analysis of the Indexes of Dissimilarity has heightened our confidence in these findings, given the problems of interpreting likelihood ratios for samples of differing sizes. Inspection of the deltas simply reinforces the conclusions suggested by the formal analysis of probability levels for the independence models.

The implications of these findings for segmentation theory are somewhat ambiguous. We cannot know to what extent the lack of movement by institutional stayers results from what could be called self-imposed barriers and how much from an actual lack of opportunity in the market itself. Therefore, regarding these results as support for the more radical versions of segmentation theory (i.e., those that imply that segmentation results primarily from the self-interested decisions of employing organizations to close their markets to otherwise competent and interested prospective employees) would be totally unwarranted.

For evidence about the content or specific nature of the structure of movement patterns and, thus, the location of possible barriers, we have depended upon the analysis of standardized effect parameters from the saturated models. What has emerged is a picture of one set of variables, all having at least some ordinal properties, in which most category staying is enacted by those who remain in the same institution and another set of nominal factors (region and affiliation) where the trend toward category staying is relatively pronounced even among those who change institutions. Moveover, there are more discernible barriers and linkages among the categories of the former set.

Though not explicated as part of the primary question, we have also educed evidence which bears upon a related issue of interest; i.e., if the five factors all appear to be the basis of some form of segmentation, which are the more powerful? The Indexes of Dissimilarity, since they provide a standardization mechanism for comparing matrices of different configurations based upon samples of varying size, give us some clues on this score, but they differ depending upon whether we focus on all the cases or only upon inter-institutional moves. If we take all cases, mission and region seem about equally important, with size and resource level less so and affiliation least of all. However, if we shift our attention to the movers only models, region appears to have much the strongest impact, with affiliation next, considerably below region but above size, mission, and resource level in magnitude. Since these latter three variables are those with ordinal properties and, in the case of mission and resource level, are, in part, surrogate measures for institutional status, these findings also lend little support to the more radical forms of segmentation theory. At the very least they cast doubt on the applicability of such explanations to this kind of micromarket.

There are many relevant issues left unresolved by the current analysis that should attract the attention of researchers interested in the labor market for collegiate administrators. Most importantly, more complex strategies designed to trace the patterns of entire careers, taking into account sequences of job transitions, as well as the educational career histories and demographic characteristics of respondents will need to be utilized. The emerging technique called event history analysis, while highly technical and potentially expensive, seems a promising approach for this kind of work.

Moreover, if we are to investigate certain key aspects of segmentation--finding out not only whether and where it exists but how it came into being and is maintained--we shall have to begin to look directly at both the supply and demand sides of the market. In its early stages, such work will almost surely require the use of qualitative methods (e.g., participant observation, focused interviewing, etc.). If we want to understand the motives and methods of participants in this market--both prospective job-holders and those who do the screening and selecting of collegiate administrators--we shall have to focus directly upon their attitudes and behavior.

FOOTNOTES

[1]The extended version of this research also addressed a set of related questions concerning the impact of sex, time period, and occupational subgroup on job-transition behavior, but a recounting of that portion of the analysis is omitted here for the sake of brevity.

[2]Since the coding scheme designates the current position as job 1, the most recent previous position as job 2, and so forth, this numerically counter-intuitive tracing of movement from higher numbered to lower numbered jobs is temporally correct.

[3]This version of R Square is a measure of the percentage reduction in L Square for a given model when it is compared to L Square for a baseline model (here, the all cases, independence model). That is, when L_1^2 is the baseline

$$R^2 = \frac{L_1^2 - L_2^2}{L_1^2}$$

model, and L_2^2 is the model of interest. (A fuller explanation of this form of R Square is available in Knoke and Burke, 1980, pp. 40-42.) Readers need to recall at this point that we are dealing here with independence models which posit <u>no</u> association between origins and destinations. Thus, a reduction in L Square brings the model closer to an acceptable level of "fit" and means that one is also getting closer to concluding that origins and destinations are not related. The latter conclusion would logically require us to accept the notion that there is no discernible structure, much less segmentation in this particular labor market.

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